REMARKS

Applicants submit herewith, in compliance with 37 C.F.R. §§ 1.121(a)(3) and 1.125 (b) and (c), a Substitute Specification and a marked-up version of the Substitute Specification showing all of the changes made relative to the specification as originally filed. The Substitute Specification (1) updates the status of the applications referenced in the priority claims; (2) corrects minor typographical errors so that the descriptions of the figures match the figures as filed; and (3) adds the required sequence identifiers (SEQ ID NOs:1-20) for the sequences referred to in the specification. Support for these amendments may be found in the application as filed, as well as in the parent application, U.S. Patent Application No. 08/444,994, filed May 19, 1995 and patented as U.S. Patent No. 6,890,710 on May 10, 2005. *See, e.g.*, Table 1 below for support for the amendments to the specification in the present application as filed.

Applicants respectfully assert that the amendments set forth in the Substitute Specification correct errors obvious to one skilled in the art and, in compliance with 37 C.F.R. § 1.125(b), do not constitute new matter. Accordingly, entry of the Substitute Specification into the record is respectfully requested.

In response to the Notice To Comply With Requirements For Patent Applications Containing Nucleotide Sequence And/Or Amino Acid Sequence Disclosures dated May 29, 2007 and in accordance with 37 C.F.R. §§ 1.821-1.825, a Substitute Sequence Listing is submitted herewith, in paper and in Computer Readable Form (CRF). The content of the paper and computer readable forms of the Sequence Listing is the same. The Substitute Sequence Listing assigns sequence identifiers to the nucleic acid and amino acid sequences present in the specification and drawings as filed. *See* Table 1 below for support in the application as filed for the sequences presented in the Substitute Sequence Listing. No new matter has been added by the Substitute Sequence Listing. Accordingly, entry of the Substitute Sequence Listing is respectfully requested.

Table 1

Amendment	**Support in application as filed**
Sequence Identifier	
SEQ ID NO:1	page 36, line 23
SEQ ID NO:2	page 36, line 27
SEQ ID NO:3	page 36, line 30 and page 45, line 15
SEQ ID NO:4	page 45, lines 11-12
SEQ ID NO:5	page 45, line 13.
SEQ ID NO:6	page 51, lines 2-3
SEQ ID NO:7	page 51, line 4.
SEQ ID NO:8; SEQ ID NO:9	FIG. 1B (drawing sheet 2/32)
SEQ ID NO:10; SEQ ID NO:11	FIGS. 2A-2H and FIG. 3A (drawing sheets 3/32 to 11/32).
SEQ ID NO:12	FIG. 3A (drawing sheet 11/32).
SEQ ID NO:13	FIG. 7 (drawing sheet 16/32).
SEQ ID NO:14; SEQ ID NO:15	FIGS. 8A-8E (drawing sheets 17/32 to 21/32).
SEQ ID NO:16	FIG. 9 (drawing sheet 22/32).
SEQ ID NO:17	FIG. 10 (drawing sheet 23/32).
SEQ ID NO:18	FIG. 11 (drawing sheet 24/32)
SEQ ID NO:19; SEQ ID NO:20	FIGS. 12A-12D (drawing sheets 25/32 to 28/32)
Figure numbers in the paragraphs beginning at page 4, line 30; page 5, line 1; page 6, line 14; page 6, line 18; page 7, line 12; page 15, line 30; page 41, line 30; page 49, line 30; and the three paragraphs beginning at page 52, line 23; and Table I beginning at page 15, line 1	Drawings as filed
Paragraph beginning at:	
page 4, line 30	FIGS. 2A-2H (drawings sheets 3/32 to 10/32)
page 5, line 1	FIGS. 3A-3B (drawing sheets 11/32 to 12/32)
page 6, line 18	FIGS. 12A-12D (drawing sheets 25/32 to 28/32)
page 6, line 31	FIG. 14 (drawing sheet 30/32)
page 7, line 12	FIG. 15 (drawing sheet 31/32)
page 49, line 30	FIGS. 12A-12D (drawing sheets 25/32 to 28/32)
page 50, line 35	FIG. 12A (drawing sheet 25/32)

Claims 1-3, 9-11, 15, 16, 18-20, 26-30, 32-36, 38-42, 44 and 45 are pending in this application. In view of their withdrawal from consideration, claims 1-3, 9-11, 15, 16, 18-20, 36-30, 32-36, 38, and 39, directed to a non-elected invention, have been canceled without

prejudice. Applicants have also canceled claims 40-42, 44, and 45 without prejudice. Applicants reserve the right to prosecute the subject matter of the canceled claims in a related application. Applicants have added new claims 46-66, directed to the elected subject matter. The new claims are fully supported by the specification, claims, and drawings as originally filed. For example, support for the new claims may be found *inter alia* in the drawings at FIGS. 12A-12D (drawings sheets 25/32 to 28/32, the sequences of which now correspond to those identified as SEQ ID NOs:19 and 20); and in the specification at page 6, lines 18-27; page 14, lines 4-7; page 15, line 30 to page 16, lines 13-31; page 21, line 34 to page 22, line 10; and in the Example of Section 7 beginning at page 44. Thus, the new claims do not constitute new matter. Upon entry of this amendment, claims 46-66 will be pending in this application.

In response to the Examiner's reminder that the references listed in the specification are not a proper information disclosure statement, Applicants submit concurrently herewith an Information Disclosure Statement Under 37 C.F.R. § 1.56 and § 1.97 (in duplicate) with an accompanying revised form PTO 1449 (List of References Cited By Applicants) and copies of References A09, B01-B03 and C66-C162.

Applicants respectfully request consideration of the amendments and remarks made herein and entry of this Amendment into the record for this application.

I. THE REJECTIONS UNDER 35 U.S.C. § 112, SECOND PARAGRAPH, SHOULD BE WITHDRAWN

Claims 40-42, 44, and 45 are rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicants regard as the invention. In particular, the Examiner alleges that (1) the reference to NS1I-1 is vague and indefinite; (2) the term "selectively hybridizes" is vague and indefinite; and (3) the reference to functionally equivalent is vague and indefinite.

Claims 40-42, 44, and 45 have been canceled without prejudice and new claims 46-66 have been added. Applicants believe that the new claims obviate these

rejections.

Accordingly, Applicants respectfully request withdrawal of the rejections under 35 U.S.C. § 112, second paragraph.

II. THE REJECTIONS UNDER 35 U.S.C. § 112, FIRST PARAGRAPH, SHOULD BE WITHDRAWN

A. The Claimed Invention is Enabled

Claims 40-42, 44 and 45 are rejected under 35 U.S.C. § 112, first paragraph, for lack of enablement. The Examiner alleges that Applicants have failed to enable the genus of NS1I-1 nucleic acids encompassed by the claims. Applicants respectfully disagree. However, in order to expedite prosecution and without acknowledging the propriety of the rejection, claims 40-42, 44 and 45 have been canceled without prejudice and new claims 46-66 have been added.

Thus, the rejection of claims 40-42, 44 and 45 under 35 U.S.C. § 112, first paragraph, for lack of enablement has been obviated. For the reasons provided below, the rejection under 35 U.S.C. § 112, first paragraph, for lack of enablement should not be applied to new claims 46-66.

The legal test for enablement is "whether one reasonably skilled in the art could make or use the invention from the disclosures in the patent coupled with information known in the art without undue experimentation." MPEP § 2164.01 (Rev. 3, August 2005); and *U.S. v. Teletronics, Inc.*, 857 F.2d 778, 785 (Fed. Cir. 1988). Enablement is not precluded even if some experimentation is necessary. *Hybritech, Inc. v. Monoclonal Antibodies, Inc.*, 802 F.2d 1367 (Fed. Cir. 1986), *cert. denied*, 480 U.S. 947 (1987). The Court of Appeals for the Federal Circuit has determined that experimentation, though laborious, is not undue experimentation where the specification provides a reasonable amount of guidance. *In re Wands*, 858 F.2d 731 (Fed. Cir. 1988). Moreover, a "patent need not teach, and preferably omits, what is well known in the art." *In re Buchner*, 929 F.2d 660, 661 (Fed. Cir. 1991). For the reasons detailed below, the specification provides one of ordinary skill in the art with sufficient guidance to meet the enablement requirement of 35 U.S.C. § 112, first paragraph.

The application as filed provides NS1I-1 nucleic acids, methods for identifying nucleic acids that hybridize to them, polypeptides, including fusion proteins, comprising amino acids encoded by such nucleic acids, host cells that express them, and methods of making polypeptides encoded by them. *See, e.g.*, FIGS. 12A-12D as filed (drawings sheets 25/32 to 28/32, the sequences of which now correspond to those identified as SEQ ID NOS:19 and 20); and the specification as filed at page 6, lines 18-27; page 14, lines 4-7; page 15, line 30 to page 16, lines 13-31; page 21, line 34 to page 22, line 10; and the Example of Section 7 beginning at page 44. In particular, the application teaches nucleic acid and amino acid sequences of NS1I-1 (*see* Figures 12A-12D, now SEQ ID NOS: 19 and 20, respectively). The degeneracy of the nucleic acid code would have enabled one of skill in the art to readily produce nucleic acid sequences encoding the amino acid sequence of the NS1I-1 protein (SEQ ID NO:20) as of the effective filing date. In addition, Applicants submit that one of skill in the art as of the effective filing date would have been able to obtain, without undue experimentation, nucleic acids that hybridize to NS1I-1 (SEQ ID NO:19) or its complement under the high stringency hybridization conditions recited in the claims using techniques known in the art (*see, e.g.*, specification at p. 15, l. 30 to p. 16, l. 33; p. 17, ll. 13-20; and p. 21, ll. 4-24). Further, the specification teaches nucleic acids encoding fusion proteins comprising an NS1I-1 protein and a heterologous protein (*see, e.g.*, specification at p. 21, l. 34 to p. 22, l. 10; and p. 51, ll. 21-23). Thus, Applicants respectfully submit that the specification does, indeed, provide sufficient guidance to enable one of skill in the art to make and use the claimed invention, without undue experimentation.

In view of the foregoing, Applicants respectfully request withdrawal of the rejection under 35 U.S.C. § 112, first paragraph, for lack of enablement.

B. The Specification Provides Written Description Support for the Claimed Invention

Claims 23, 25, 43-46, and 48-52 are rejected under 35 U.S.C. § 112, first paragraph, for failing to meet the written description requirement. Applicants note that claims 46 and 48-52 were not pending in this application. The Examiner alleges that Applicants have failed to provide written description support for the genus of NS1I-1 nucleic acids. Applicants respectfully disagree. However, in order to expedite prosecution and without acknowledging the propriety of the rejection, Applicants have canceled claims 23, 25, and 40-45 without prejudice and add new claims 46-66.

Thus, the rejection of claims 23, 25, and 43-45 under 35 U.S.C. § 112, first paragraph, for lack of written description has been obviated. For the reasons presented below, the rejection under 35 U.S.C. § 112, first paragraph, for lack of written description should not be applied to new claims 46-66.

To satisfy the written description requirement, an applicant must "convey with reasonable clarity to those skilled in the art that, as of the filing date sought, he or she was in possession *of the invention.*" *Vas-Cath*, 935 F.2d at 1563-64 (emphasis in original) and MPEP § 2163 (Rev. 5, Aug. 2006). Moreover, it is well established that the specification need not describe, and should preferably omit what is known in the art. *Hybritech Inc. v. Monoclonal Antibodies*, Inc., 802 F.2d 1367 (Fed. Cir. 1986); *In re Hayes Microcomputer Products, Inc. Patent Litigation*, 982 F.2d 1527 (Fed. Cir. 1992); and *Vas-Cath*, 935 F.2d 1555.

Applicants respectfully assert that the specification, coupled with information well-known in the art as of the effective filing date of the present application, would have reasonably conveyed to one of skill in the art, as of the effective filing date of the present application, that Applicants were in possession of the claimed invention.

As discussed above, the specification of the present application provides NS1I-1 nucleic acids; fusion proteins comprising polypeptides encoded by these nucleic acids; expression vectors and genetically engineered host cells comprising these nucleic acids; and methods for producing polypeptides by culturing these host cells under conditions in which these nucleic acids are expressed. *See, e.g.*, FIGS. 12A-12D as filed (drawings sheets 25/32 to 28/32, the sequences of which are now identified as SEQ ID NOs:19 and 20); and the specification as filed at page 6, lines 18-27; page 14, lines 4-7; page 15, line 30 to page 16, lines 13-31; page 21, line 34 to page 22, line 10; and the Example of Section 7 beginning at page 44. Thus, as of the effective filing date of the present application, the specification coupled with the state of the art does, indeed, provide sufficient written description of the structural and functional features of the nucleic acids of the claimed invention to reasonably convey that Applicants were in possession of the claimed invention.

In view of the foregoing, the rejection under 35 U.S.C. § 112, first paragraph, for lack of written description cannot stand and should be withdrawn.

CONCLUSION

Applicants respectfully request that the present amendments and remarks be made of record in the present application. Applicants believe that the rejections have been overcome and/or obviated. An early allowance of the application is therefore earnestly requested. If any issues remain in connection herewith, the Examiner is respectfully invited to telephone the undersigned to discuss the same.

Respectfully submitted,

Date: October 1, 2007

Laura A. Coruzzi 30,742
Laura A. Coruzzi (Reg. No.)

By: Jennifer J. Chheda 46,617
Jennifer J. Chheda (Reg. No.)

JONES DAY
222 East 41st Street
New York, New York 10017
(212) 326-3939

Enclosures